

Effect of Nutrition Education Based on Video and Leaflet Towards Nutritional Knowledge of 14th Junior High School Bekasi Student

Pengaruh Edukasi Gizi Berbasis Media Video dan Leaflet Terhadap Pengetahuan Gizi Seimbang Siswa SMPN 14 Kota Bekasi

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ABSTRACT

The age-range of teenagers according to Regulation of the Minister of Health is 10 to 18 years. The most cause of nutrition problems in adolescents is due to lack of nutritional knowledge and lead to a wrong choice of what meals would be consumed because the level of knowledge in adolescents would affect behavior and habit on choosing meals at school or home. Nutrition education is highly important to encourage adolescent nutrition knowledge so it is necessary to be socialized as an effort to change the wrong eating habits (Sediaoetama, 2000). This study aimed to see the impact of nutrition education by using video and leaflet on student knowledge. This type of research is a quasi-experiment used a one-group pretest-posttest design. The number of samples were 88 students. This study used the Paired Sample Test. This research also used an Independent T-Test to found out which media is more effective. The average pre-test of the video group was 59.31 and the post-test was 72.05 with a standard deviation is 14.40. While in the leaflet group the pre-test average was 69.77, and the post-test was 82.95 with a standard deviation is 15.01. Results of the Paired Sample T-Test analyzed is $0.000 < 0.05$ for video. And p-value $0.003 < 0.05$ for the leaflet, which means there is an impact of nutrition education used video and leaflets on balanced nutrition knowledge of 14th Junior High School Bekasi Students. The result of Independent T-Test is leaflet more effective as a nutrition education media.

Keywords— Balanced Nutrition, Junior High School Student, Leaflet, Nutrition Knowledge, Video

ABSTRAK

Rentang usia remaja menurut PERMENKES adalah 10 sampai dengan 18 tahun. Salah satu penyebab masalah gizi pada remaja diakibatkan karena kurangnya pengetahuan gizi dan akan menyebabkan salah untuk memilih makanan yang akan dikonsumsi karena tingkat pengetahuan pada remaja akan berpengaruh terhadap sikap dan perilaku dalam memilih makanan di sekolah atau di rumah. Penyuluhan gizi sangat penting untuk menambah pengetahuan gizi remaja sehingga perlu diberikan agar dapat merubah kebiasaan makan yang salah (Sediaoetama, 2000). Penelitian ini bertujuan untuk melihat pengaruh edukasi gizi menggunakan video dan leaflet terhadap pengetahuan siswa. Jenis penelitian ini adalah quasi experiment dengan menggunakan desain one group pretest-posttest. Jumlah sampel dalam yang penelitian ini sebanyak 88 orang yang akan dibagi menjadi 2 kelompok, video dan leaflet. Penelitian ini menggunakan uji Paired Sample Test Setelah itu, menggunakan uji Independent T Test untuk mengetahui media mana yang lebih efektif. Rata-rata kelompok video pre test sebesar 59.31 kemudian post test sebesar 72.05 dengan standar deviasi 14.40. Sedangkan pada kelompok leaflet rata-rata pre test sebesar 69.77 kemudian post test sebesar 82.95 dengan standar deviasi 15.01. Hasil analisis paired sample t test nilai p-value sebesar $0.000 < 0.05$ untuk video. Dan p value sebesar $0.003 < 0.05$ untuk leaflet yang berarti ada pengaruh edukasi gizi menggunakan media video dan leaflet terhadap pengetahuan gizi seimbang siswa SMPN 14 Kota Bekasi. Hasil dari Independen T-Test ialah leaflet lebih efektif sebagai media edukasi gizi.

Kata kunci— Gizi Seimbang, Leaflet, Pengetahuan Gizi, Siswa SMP, Video

INTRODUCTION

One of the indicators of the quality of Human Resources, according to Myrnawati (2015), is a state of good nutrition. Things that affect good nutritional status are knowledge related to food and nutrition. This caused the need for nutrition education, both formal and informal. The Director General of the Ministry of Health of the Republic of Indonesia (2017) states that in the preparation of quality Human Resources, nutrition is a major component. Kesehatan masyarakat dinilai melalui pengetahuan tentang gizi. The double burden of malnutrition arose due to shortages and/or excess intake that occurs simultaneously and can affect all age groups, especially school-age children. (Almatsier, Soetardjo and Soekarti, 2011).

According to Istiany (2013) adolescents are individuals in the period between children and adults and have an age range according to WHO, 12 to 24 years. Growth and development of the body in adolescence is quite fast and as a result, adolescents need more energy and when teenagers tend to change lifestyles and one of the actions that often happens is to like to try the food and cause an imbalance in nutrient intake (Marmi, 2013). Almatsier (2010) states that there are three reasons for adolescents to be included in vulnerable groups. First, growth increases require large energy. Second, lifestyles and eating habits will require energy and other nutrients. And the third, sports, and addiction to prohibited goods will cause energy and nutrient requirements to increase. The most cause of nutrition problems in adolescents is due to lack

of nutritional knowledge and lead to a wrong choice of what meals would be consumed because the level of knowledge in adolescents would affect behavior and habit on choosing meals at school or home. Nutrition education is highly important to encourage adolescent nutrition knowledge so it is necessary to be socialized as an effort to change the wrong eating habits (Sediaoetama, 2000).

Nutritional status has several factors, one of which is knowledge related to food and nutrition. Therefore, formal and non-formal nutrition education is needed for teenagers (Sulistyoningsih, 2012). An example of the communication process expressed by Waryana (2016) is counselling. The media used as a support for counselling, one of which is audiovisual because it can provide real stimulation because moving images and sound with a short duration of time (Notoatmodjo, 2010). Audio-visual media one of which is video, attracting material through vision and hearing so as to make students receive knowledge to the maximum. Erviana's research (2012) revealed a compilation of subjects who were given information via video, the level of knowledge of these subjects was included in both categories because the information expressed was easier to understand. Based on Anestya's research (2018) on junior high school students in Solo, there was a decrease from 27.3% to 4.5% of children who had unbalanced nutritional knowledge. While the leaflet according to Notoatmodjo (2010) is one of the health promotion media that serves to facilitate the reception of health messages. Media leaflets

have the advantage of short, concise and clear sentences and can be given pictures or illustrations that can attract interest to read. In the research of Fatimah (2017), the result of a lack of balanced nutrition knowledge after using the leaflet media increased from 54.54% to a good category of 60.61%. In the results of the Latif study (2018), there was a decrease after the need to use media leaflets on the knowledge of malnutrition in students of Patampanua Middle School, namely from 15.8% to 9.03%.

Based on the results of research conducted by Saputra (2016) shows the results after being educated through video there is an increase in the average knowledge from 7.72 to 11.31. While in education through leaflets there was an average increase from 8.03 to 10.72. However, in Fitriani's study (2019), there was no level of knowledge using video or leaflets.

A balanced menu according to Almatsier (2010) is the consumption of food to meet one's nutritional needs. The provision of food that follows the guidelines for balanced nutrition can overcome the deficiency of nutrients in one food. Therefore, the provision of a balanced diet is needed for the fulfilment of nutrients. In the latest nutritional guidelines (Ministry of Health Republic of Indonesia, 2014) there are two improved food guidelines, one of which is My Meal Plate which is used as a visualization of eating guides at every meal more than the portion of side dishes (Kemenkes, 2014). This study aimed to see the impact of nutrition education by using video and leaflet on student knowledge.

METHODS

Due to the Covid-19 pandemic and the existence of PSBB (Large-Scale Social Restriction) so teaching and learning activities are eliminated at school so research is conducted online via Youtube, WhatsApp, and Google Form applications with 7th-grade subjects in State 14th Junior High School Bekasi.

This type of research is a quasi-experiment used a one-group pretest-posttest design. The number of samples were 88 students, were divided into 2 groups, video and leaflets. This study used the Paired Sample Test. This research also used an Independent T-Test to found out which media is more effective.

The first step is to create a measuring instrument for knowledge in the form of questionnaires and media, videos and leaflets for Balanced Nutrition and My Plate. Video media is created with Adobe Premiere, After Effects and iMovie. While the leaflet media uses the Corel Draw application. Primary data obtained through pre and post-test in the form of a questionnaire by researchers with balanced nutrition material containing 20 questions, consisting of 14 questions about balanced nutrition and 6 about my plate.

The second step is to collect data. The primary data are data on the subject's characteristics, gender, age, and knowledge of balanced nutrition and my plate. First, observing used a pre-test questionnaire, then researchers test changes through a questionnaire (post-test) after being given video media and leaflets. The time interval between pre-test and media delivery according to Vaus (2010) shouldn't be

too long. So the distance between the pretest and the distribution of media is one day with a pre-test time of 15 minutes to avoid bias because there is information from the outside. Then, the

distance between media and post-test according to Arimurti (2012) is seven days or one week with 15 minutes.

RESULTS AND DISCUSSIONS

Tabel 1. Frequency Distribution of Respondent Characteristics

Characteristic of Respondents	N (88)	Percentage (%)
Gender		
Male	38	43.2
Female	50	56.8
Age		
12	24	27.3
13	57	64.7
14	7	8

Characteristic of Respondents

Based on table 1, the results obtained by gender respondents were female, totalling 50 students (56.8%), while 38 students (43.2%) were male. While on the characteristics of age, age 13 years a total of 57 students (64.7%), while at the age of 12 years a total of 24 students (27.3%), 14 years total of 7 students (8%).

Nutrition Knowledge Level

Category	Video									
	Pre - Test n	%	Min	Max	Mean	Standar Deviation	Post Test n	%	Min	Max
Lack	19	43.18					10	22.73		
Enough	21	47.72	35	90	59.31	13.23	13	29.54	20	100
Good	4	9.1					21	47.73	72.04	19.08

Tabel 2. Frequency Distribution of Video Media Knowledge Level

Tabel 3. Frequency Distribution of Leaflet Media Knowledge Level

Category	Leaflet									
	Pre - Test n	%	Min	Max	Mean	Standar Deviation	Post Test n	%	Min	Max
Lack	9	20.45					3	6.82		
Enough	20	45.45	40	100	69.77	15.01	11	25	40	100
Good	15	34.1					30	68.18	82.95	14.40

The knowledge tested in this study was the knowledge of the 10 Message of Balanced Nutrition and My Plate which were visualized with animated images in videos and leaflets. The Balanced Nutrition Message delivered is not limited to the 10 Balanced Nutrition Messages, but also to the 4 pillars namely, consumption of diverse foods, clean and healthy lifestyle

(PHBS), physical activity and weight control on a regular basis and informing about the portion of carbohydrates, vegetables, fruit and side dishes according to plates a day.

Based on tables 2 and 3, it can be seen that before being given video media, students who have less knowledge level are as many as 19 students (43.18%), quite as many as 21

students (47.72%) and good as many as 4 students (9.1%) with grades a minimum of 35 and a maximum value of 90, an average value of 59.31 with a standard deviation is 13.23. Whereas in the leaflet group, before being given the media leaflets students had a less than 9 students level (20.45%), quite as many as 20 students (45.45%), and good as many as 15 students (34.1%) with a minimum value of 40 and a maximum value of 100, the value an average of 69.77 with a standard deviation is 15.01.

After being given video media the students have less knowledge level down to 10 students (22.73%), enough to go down to 13 students (29.54%) and both increase to 21 students (47.73%) with a minimum value of 20, and a maximum value of 100, the average value - averaged 72.04 with a standard deviation is 19.08. Then after being given a media leaflet, students who had less knowledge level fell to 3

Comparison of Video Media Knowledge

Table 4. Comparison of Balanced Nutrition Knowledge Before and After Providing Video

<i>p-value</i>	
Before	After
	0.000

Paired Sample T-Test test results obtained a p-value of 0,000 <0.05 which means there is an effect of nutrition education before and after video media is given to balanced nutrition knowledge in 14th State Junior High School students. Syakir's research (2018) has a p-value of 0.0001 which means that there is an influence of nutrition counselling intervention with animated media on the knowledge of anaemia in adolescent girls. This study has an

students (6.82%), the level of knowledge dropped enough to 11 people (25%), the level of good knowledge rose to 30 students (68.18%) with a minimum value of 40, and a maximum value of 100, an average value of 82.95 with a standard deviation is 14.40.

There are still many students who have a lack knowledge when pre-test in line with the research of Meidiana (2018) which shows the low pre-test scores of students of IT IQRA Junior High School Bengkulu in the video group is 8.60 and in the leaflet group is 8.83. One of the factors that cause many students who have low knowledge is the lack of nutritional knowledge due to lack of socialization among junior high school students. This was also stated by Soekirman (2011) that the lack of socialization and publication of balanced nutrition caused many people who were unfamiliar with balanced nutrition messages.

average pre-test of 69.88 and an average post-test of 77.70. Cetinkaya's research (2016) video was able to increase the average knowledge about food preparation for students in Nevsehir, Turkey from an average of 11.53 to 13.34 and had a significant difference because it had a p-value of 0.001.

As said by Folkvord (2019) that video can contribute to increased knowledge and can influence food selection among students and choosing the type of food in video and video-based education is quite effective in influencing behaviour in certain types of health. Tuong (2012) said that the intervention using video was very effective to modify health behaviour.

Comparison of Leaflet Media Knowledge

Table 5. Comparison of Balanced Nutrition Knowledge Before and After Providing Leaflet

<i>p-value</i>	
Before	After
	0.000

Paired Sample T-Test test results obtained a p-value of 0,000 <0.05 which means there is an effect of nutrition education before and after leaflet media is given to balanced nutrition knowledge in 14th State Junior High School students. This research is in line with the study of Meidiana (2018) which has a p-value of 0,000, which means there is an influence of education with the media leaflet on adolescent knowledge before and after education at IQRA IT Junior High School in Bengkulu City in 2018

Tabel 6. Comparison of the Effectiveness of Video Media and Leaflets

	Mean	Standar Deviation	<i>p-value</i>
Video	72.05	19.08	0.003
Leaflet	82.95	14.40	

Based on table 6, it shows that the average post-test of the video group is 72.05 with a standard deviation is 19.08 and the leaflet group has an average of 82.95 with a standard deviation is 14.40. This shows that the leaflet has a greater average than the video. Then after being tested with an independent t test, the p value is 0.003, which means <0.05 and shows that there is a difference in the average student knowledge between the video and leaflet groups and according to the data above the media leaflet is more effective to be a model of nutrition education. The results of this study indicate that the students' knowledge after being given the

with an average value before the education of 36.45 and after education 39.65.

This study is also in line with Saputra's research (2016) which has results based on statistical tests having a p-value of 0,000 which means that there is an influence of students' knowledge about fruits and vegetables before and after being educated through leaflet media at AL Chasanah Middle School with an average value pre-test 8.03 and post-test 10.72. Vahedian (2014) shows the average results before and after the intervention using educational leaflets for school students in Iran are 8.72 and 9.42 respectively and have a p-value of 0.005 which means there is a significant difference between the knowledge of school students in Iran.

Effectiveness of Video Media and Leaflets
leaflet media has an average higher than the average of the leaflet group.

According to Meidiana (2018), subject knowledge rises after being given leaflets, from an average of 36.45 and a standard deviation is 3,537 rising to an average of 39.65 with a standard deviation is 4,136. According to Pakhri's research (2018) which has a p-value of 0,000 <0.05 which means that there is a difference in nutrition knowledge before and after the leaflet is given to Makassar 35 junior high school students with an increase in the number of students who have good nutrition knowledge of 42% before being given the media, rising to 79% after being given media leaflets. The benefits of leaflets according to Supriasa (2013) are that they are easy to carry everywhere and are more informative.

Utama (2019) mentioned that used leaflet media was more effective in increased knowledge, it was proven in the study that there was a 92.5% increase in used leaflet media. Because of leaflets more effective for describing messages in a sequence, short in the structure of writing and pictures and can be read repeatedly (Notoatmodjo, 2010). In fact, in Yoshida's study (2012), leaflets can raise awareness for early lung cancer screening, because according to them, the leaflet has short information so that it is easily understood by the wider community.

CONCLUSION AND SUGGESTION

Paired Sample T-Test test results obtained a p-value of 0,000 <0.05 which means there is an effect of nutrition education before and after video and leaflet media are given to balanced nutrition knowledge in 14th State Junior High School students. The results of this study indicate that the students' knowledge after being given the leaflet media has an average higher than the average of the leaflet group. And for further research, to overcome academic differences, use the washout method and include other variables such as eating habits of vegetables and fruit or snack habits.

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